

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-9. (Canceled)

10. (Currently amended) A system for providing communications over an electric power system having a medium voltage power line, a plurality of customer power lines with each extending to a customer residence, and a first transformer coupling the medium voltage power line to the customer power lines, the system comprising:

an aggregation device forming a portion of a data path between the medium voltage power line and a point of presence;

a first transformer bypass device communicatively coupled to the medium voltage power line and the plurality of customer power lines to provide a data path bypassing the first transformer;

said first transformer bypass device comprising a first modem communicatively coupled to the plurality of customer power lines and a second modem communicatively coupled to the medium voltage power line and said first modem; and

a first isolation device forming at least part of a data path between said second modem and the medium voltage power line; and

wherein data is communicated between said transformer bypass device and said aggregation device via the medium voltage power line.

11. (Previously presented) The system of claim 10, wherein said aggregation device comprises:

a third modem communicatively coupled to the medium voltage power line.

12. (Previously presented) The system of claim 11, wherein said aggregation device further comprises a coupling device forming at least part of a data path between said third modem and the medium voltage power line.

13. (Previously presented) The system of claim 10, wherein said aggregation device is in communication with the point of presence, at least in part, via an optical fiber.

14. (Previously presented) The system of claim 10, wherein said aggregation device is in communication with the point of presence, at least in part, via a wireless link.

15. (Canceled)

16. (Canceled)

17. (Previously presented) The system of claim 10, further comprising:

a data router in communication with said first modem and said second modem.

18. (Previously presented) The system of claim 10, wherein said aggregation device comprises:

a third modem communicatively coupled to the medium voltage power line and in communication with said second modem; and

an isolation device forming at least part of a data path between said third modem and the medium voltage power line.

19. (Previously presented) The system of claim 18, wherein said second modem and said third modem communicate telephony data.

20. (Previously presented) The system of claim 18, wherein said second modem and said third modem communicate using Orthogonal Frequency Division Multiplexing.

21. (Previously presented) The system of claim 10, wherein each of the customer power lines is coupled to a first set of communication devices and each of said communication devices has a unique address.

22. (Canceled)

23. (Previously presented) The system of claim 17, wherein said data router is configured to prioritize transmission of data received from the customer power lines.

24. (Previously presented) The system of claim 23, wherein said transformer bypass device communicates telephony data.

25. (Previously presented) The system of claim 23, wherein said first modem communicates using Orthogonal Frequency Division Multiplexing.

26. (Previously presented) The system of claim 10, wherein said transformer bypass device communicates Internet data.

27. (Previously presented) The system of claim 10, wherein said transformer bypass device communicates video data.

28. (Previously presented) The system of claim 10, wherein the electric power system comprises a second transformer coupled to a second plurality of customer power lines communicatively coupled to a second set of communication devices, the system further comprising:

a second bypass device at a third location comprising:

a third modem communicatively coupled to the second plurality of customer power lines and in communication with said second set of communication devices;

a fourth modem communicatively coupled to the medium voltage power line; and

a data router in communication with said third modem and said fourth modem.

29. (Currently amended) A method of using a communication system for providing communications between at least one communication device and a point of presence, the system comprised of a bypass device and an aggregation device in communication with each other via a medium voltage power line, the bypass device in communication with the communication device via a first low voltage power line, the method comprising:

at the bypass device:

receiving a first data packet signal from the communication device via the first low voltage power line,

demodulating said first data packet signal,

modulating a signal based on said first data packet signal to form a second data packet signal, and

isolating the first low voltage power line from the medium voltage power line; and

transmitting said second data packet signal through the medium voltage power line; and

at the aggregation device:

receiving said second data packet signal from the medium voltage power line,

demodulating said second data packet signal, and

transmitting a third signal based on said second data packet signal to the point of presence.

30. (Previously presented) The method of claim 29, further comprising:
at the bypass device:

receiving data signals from a plurality of communication devices;

and

prioritizing said received data signals at the bypass device.

31. (Previously presented) The method of claim 29, wherein said first data packet signal comprises telephony data.

32. (Previously presented) The method of claim 29, wherein said first data packet signal comprises Internet data.

33. (Previously presented) The method of claim 29, wherein said first data packet signal comprises video data.

34. (Previously presented) The method of claim 29, wherein said first data packet signal comprises audio data.

35. (Previously presented) The method of claim 29, wherein said audio data comprises music data.

36. (Currently amended) A transformer bypass device providing a communication path around a transformer between a medium voltage power line and at least one low voltage power line, comprising:

a first modem communicatively coupled to the low voltage power line;

a second modem in communication with said first modem and communicatively coupled to the medium voltage power line; ~~and~~

an isolation device disposed between said second modem and the medium voltage power line; and

a data router in communication with said first modem and said second modem.

37. (Canceled)

38. (Canceled)

39. (Currently amended) The device of claim ~~38~~ 36, wherein the isolation device is an optical isolation device.

40. (Previously presented) The device of claim 36, wherein said second modem uses Orthogonal Frequency Division Multiplexing.

41. (Previously presented) The device of claim 40, wherein said first modem uses Orthogonal Frequency Division Multiplexing.

42. (Previously presented) The device of claim 36, wherein said first modem uses Orthogonal Frequency Division Multiplexing.

43. (Previously presented) The device of claim 36, wherein said second modem uses Code Division Multiple Access.

44. (Previously presented) The system of claim 10, wherein said first modem is in communication with a plurality of communication devices via the plurality of customer power lines.

45. (Previously presented) The system of claim 44, wherein said bypass device further comprises a data router configured to prioritize data packets received from the plurality of communication devices for transmission on the medium voltage power line.

46. (Previously presented) The system of claim 45, wherein said first modem uses Orthogonal Frequency Division Multiplexing.

47. (Currently amended) A communication device for providing data communications through a medium voltage power line, comprising:

a communication interface providing at least part of a communication path between the medium voltage power line and the Internet;

a coupling device communicatively coupled to the medium voltage power line; ~~and~~

a modem in communication with said communication interface and in communication with the medium voltage power line via said coupling device; and an isolator disposed between said modem and the medium voltage power line.

48. (Previously presented) The device of claim 47, wherein said communication interface is configured to communicate via an optical fiber.

49. (Canceled)

50. (Currently amended) The device of claim ~~49~~ 48, wherein said isolator is disposed between said modem and said coupling device.

51. (Previously presented) The bypass device of claim 47, wherein said modem uses Orthogonal Frequency Division Multiplexing.

52. (Currently amended) A method of communicating Internet packet data through a communication system to a communication device, the system comprised of a bypass device and a network interface device communicatively coupled to each other via a medium voltage power line, the bypass device in communication with the communication device via a first low voltage power line, the method comprising:

at the network interface device:

receiving a first packet of Internet data from a network, and

transmitting said received first packet of Internet data through the medium voltage power line; and

at the bypass device:

receiving said transmitted first packet of Internet data via the medium voltage power line, and

isolating the first low voltage power line from the medium voltage power line; and

transmitting said first packet Internet of data through the low voltage power line to the communication device.

53. (Previously presented) The method of claim 52, further comprising at the communication device receiving said first packet of Internet data.

54. (Currently amended) A method of communicating telephony packet data through a communication system to a communication device, the system comprising of a bypass device and a network interface device communicatively coupled to each other via a medium voltage power line, the bypass device communicatively coupled to the communication device via a first low voltage power line, the method comprising:

at the network interface device:

receiving a first packet of telephony data from a network, and

transmitting said received first packet of telephony data through the medium voltage power line; and

at the bypass device:

receiving said transmitted first packet of telephony data on the medium voltage power line, and

isolating the first low voltage power line from the medium voltage power line; and

transmitting said first packet of telephony data through the low voltage power line to the communication device.

55. (Previously presented) The method of claim 54, further comprising:

at the communication device:

receiving said first packet of telephony data.

56. (Previously presented) The method of claim 54, further comprising:
at the bypass device:

receiving a second transmitted packet of telephony data via the low
voltage power line from the communication device, and

transmitting said second packet of telephony data through the
medium voltage power line; and

at the network interface device:

receiving said second packet of telephony data from the medium
voltage power line, and

transmitting said second received packet of telephony data through
the network.

57. (Previously presented) The device of claim 36, wherein the
transformer bypass device is in communication with an aggregation device that
comprises:

a third modem communicatively coupled to the medium voltage power line
and in communication with said second modem of the transformer bypass
device; and

a transceiver in communication with said third modem and a point of
presence.

58. (Previously presented) The device of claim 36, wherein said first
modem is communicatively coupled to a plurality of low voltage power lines and

the low voltage power lines are coupled to a plurality of communication devices and each of said communication devices has a unique address.

59. (Previously presented) The device of claim 58, wherein said data router is configured to prioritize transmission of data received from the communication devices.

60. (Previously presented) The device of claim 36, wherein the transformer bypass device communicates telephony data.

61. (Previously presented) The device of claim 36, wherein said first modem communicates using Orthogonal Frequency Division Multiplexing.

62. (Previously presented) The device system of claim 36, wherein the transformer bypass device communicates Internet data.

63. (Previously presented) The device of claim 36, wherein the transformer bypass device communicates video data.

64. (Previously presented) The device of claim 36, further comprising a second transformer communicatively coupled to a second set of plurality of low voltage power lines communicatively coupled to a second set of communication devices, the device forming part of a system comprising:

a second bypass device comprising:

a third modem communicatively coupled to the second set of plurality of customer power lines and in communication with said second set of communication devices and each of said communication devices has a unique address;

a fourth modem communicatively coupled to the medium voltage power line; and

a second data router in communication with said third modem and said fourth modem.

